



Tools for Cleaning Up Illinois Diesel: Technology, Funding, and Collaboration

May 2, 2006 – Summary

Tools for Cleaning Up Illinois Diesel: Technology Funding and Collaboration held at the BP Naperville Campus in Naperville, IL was the eighth event presented by the USEPA Midwest Clean Diesel Initiative which educated fleet managers and public policy officials on the opportunities to reduce diesel emissions. The event was also co-presented by the Illinois Environmental Protection Agency, Illinois Lt. Governor Pat Quinn's Office, Chicago Area Clean Cities Coalition, U.S. Department of Energy's Regional Office and the Diesel Technology Forum. Over 150 participants attended the event, where current environmental and energy challenges in the transportation sector were discussed as well as the solutions to improving air quality through the use of clean diesel technologies, alternative fuels, hybrid engines, and idle reduction technologies. Corporate sponsors for this event included: BP, Caterpillar, Cummins NPower, Diesel Technology Forum, Engine Control Systems, and International Truck and Engine Corporation. Exhibitors included: Autotherm, Donaldson Company, Espar Heater Systems, Great Lakes Biodiesel, IdleAire Technologies Corp., Inland Detroit Diesel, and ZTR Control Systems. Media coverage included Motor Age, a trade publication, and the Naperville Sun, a local newspaper.

Participants were able to see various technologies deployed on vehicles and talk to their operators about their experience/performance. Display vehicles included: Caterpillar Skidsteer loader with a catalytic muffler; Exelon/ComEd Medium Duty Electric Bucket Truck; 2006 Ford Escape Hybrid; Naperville 203 School Bus equipped with a diesel particulate filter; and a Duplainville Transport heavy duty tractor-trailer with an auxiliary power unit.

Overview of the Clean Air Act and the Importance of Voluntary Action

Cheryl Newton, Deputy Director, Air and Radiation Division, USEPA, Region 5 along with Ron Burke, Associate Director, Illinois Environmental Protection Agency set the stage for the day – emphasizing as USEPA's regulations to clean the air get more stringent, the importance of collaboration and voluntary programs will be the key to our next generation of environmental protection. *"The goal of the Midwest Clean Diesel Initiative is to impact 1,000,000 engines by 2010, which is a very ambitious goal and this is why we have created the Midwest Clean Diesel Initiative to help us achieve that goal"* stated Cheryl Newton, Deputy Director, Air and Radiation Division.

Reducing Diesel Emissions to Meet the Clean Air Challenge in Illinois

"Everything we have in the pipeline now will not get the Chicago area into attainment for the ozone and fine particulate standards" stated Ron Burke, Associate Director, Illinois Environmental Protection Agency. Ron provided an overview of a mobile source control measure analyses that was carried out by LADCO, the Lake Michigan Air Directors Consortium which provides technical assistance to Illinois, Indiana, Michigan, Ohio, and Wisconsin. According to the technical report, 40% of NO_x emissions and 15% of PM_{2.5} come from diesel-powered vehicles. The report goes into depth on various emission reduction scenarios for both on-road and off-road equipment. Illinois

Environmental Protection Agency is making great strides with their Illinois Clean School Bus Program with over \$2.3 million in grants to retrofit 2,400 school buses. In addition, Illinois has: an alternate fuel rebate program; enacted sales tax exemption on certain percentages of biodiesel; implemented a mandate that all State agencies, colleges, universities, and transit agencies utilize 2% biodiesel.

Panel Discussion: U.S. EPA Diesel Regulations, Retrofit Technologies, and Ultra Low Sulfur Diesel

Speakers on this panel outlined the technical options for reducing diesel engine emissions which can be summarized as refueling, retrofitting, retiring, re-powering, or replacing diesel-powered engines. Ken Katch, Director of Emission Solutions for Caterpillar discussed the options to address in-use diesel engines with after-market control technologies and applauded EPA's collaborative approach to providing incentives to encourage voluntary participation of fleets to clean up diesel engines such as with the Clean School Bus USA program. Tom Pelletier, Fleet Maintenance Manager from Naperville 203 schools talked about the school district's positive experience in retrofitting buses with diesel particulate filters. Bob Schaeffer, with BP discussed the transition to ultra low sulfur diesel, where beginning October 15, 2006 all retail outlets will be dispensing ultra low sulfur diesel (ULSD). Bob also talked about the downgrading requirement which limits production of ULSD fuel (15ppm sulfur content) to 80% while the remainder will be produced at 500ppm. To help keep track of the different fuel types, product transfer documents will be used to identify the fuel as it moves down the distribution chain, and diesel dispenser pump labels will be added to inform drivers of which fuel to use.

Panel Discussion: Alternative Fuels and Hybrid Vehicles

Panelists discussed alternative fuels and hybrid vehicles that offer air quality benefits. Jeff Nelson with Stepan Biodiesel Production discussed how biodiesel is produced and the benefits of using this fuel including: increased lubricity can be used in existing diesel engines and has a higher cetane value. Larry Tatarowicz with Cummins Westport focused on the benefits of using natural gas or hydrogen fuel and highlighted the different vehicles that can be powered with these fuels. Patrick Pineau with Exelon discussed the benefits of using biodiesel, gave an overview of lessons learned during the early years of production and talked about future plans involving biodiesel use. Jim Williams with International Truck and Engine Corporation is a member of the Hybrid Truck Users Forum (HTUF). The HTUF program objectives include: the acceleration of hybrid electric vehicles in the marketplace, establish fuel economy and emission reduction standards for hybrid vehicles, and improve performance standards. Jim highlighted the benefits to using a hybrid electric vehicle including: reduced noise, equal to or better drivability, available auxiliary power generation, increased fuel economy and emission reduction. Doug Dittrich with General Motors mentioned the various cities where hybrid electric buses are in use and presented an overview of how they are manufactured and tested. Matt Brusstar with USEPA's Office of Transportation and Air Quality provided a glimpse of the future with hydraulic hybrids coming into the marketplace and how these vehicles can recover over 70% of energy lost during braking and this translating into a 60% fuel economy savings.

Panel Discussion: Idle Reduction and Fuel Saving Technologies for Trucks, Buses, and Locomotives

Bill Thompson with the American Association of Railroads talked about CREATE, Chicago Regional Environmental and Transportation Efficiency, a \$1.5 billion public-private partnership with the Illinois Department of Transportation, Chicago Department of Transportation, and all the Class I rail companies to increase the efficiency of the region's rail infrastructure. Ed Arts with EcoTrans Technologies, a manufacturer of idle reduction technologies for locomotives highlighted

the Ontario NOx Emissions Trading Program, where companies in the Midwest can trade NOx emission credits on the Ontario cap and trade system. Mr. Arts emphasized that the carrot and not the stick is best approach to environmental protection and that market mechanisms are more effective than grant programs. John Drake with Duplainville Transport highlighted USEPA's voluntary SmartWay Transport Partnership Program, and the benefits this voluntary program has had on his company's bottom line. On average, the company saves \$181,600 annually on fuel through implementation of the Tri-pack system which includes an auxiliary power unit that provides power, heating and cooling. Advanced Truck Stop Electrification, a technology that allows heavy duty trucks to plug into an electric grid instead of idling their main engines to provide cab comfort is coming to Illinois, said Carol Doty with IdleAire Technologies. IdleAire announced 15 sites planned in the Midwest with three sites in Illinois expected to begin construction in August 2006.

Panel Discussion: Public Sector Leading the Way to Cleaner Air

Walt Zyznieuski from IDOT and Mark Lynes from Walsh Construction discussed the Dan Ryan construction project and the ways in which they are trying to make the project more environmentally friendly. The Dan Ryan Construction project is adjacent to many neighborhoods and schools; therefore, IDOT convened a panel of public health experts and academia to develop a plan to protect public health during the 3-year construction project. Most construction equipment will be using ultra low sulfur diesel fuel and some equipment will be retrofitted. In addition, idle reduction efforts have been implemented. To reduce road side dust caused by construction, the dust is watered down at the end of each day. Air monitors have been installed around the construction site to give an accurate report of the air quality surrounding the construction area. Rosemarie Andolino from the O'Hare Modernization Program talked about the changes that will be happening to O'Hare as it expands and restructures to become more efficient and environmentally sound. The O'Hare Modernization Program includes contract specifications that on-road and off-road diesel powered equipment utilize ultra low sulfur diesel fuel and be retrofitted with EPA/CARB verified technologies. Tom Reynolds from the Chicago Transit Authority (CTA) maintains a fleet of over 2300 buses. He mentioned that they are implementing the use of retrofits, ULSD, biodiesel and have 23 hybrids on order. Finally Howard Henneman with the City of Chicago Department of Fleet Management gave an overview of the City's past and planned use of retrofits and alternative fuels. The City has already retrofitted 4 refuse trucks with diesel particulate filters and 76 trucks with diesel oxidation catalysts. This year an additional 370 trucks will be retrofitted with oxidation catalysts. Furthermore, over 50 street sweepers have been retrofitted with filters or catalysts. The city has also retrofitted 29 front end loaders with catalysts.

Panel Discussion: Funding Opportunities and Legislative Update

Dawn Fenton of the Diesel Technology Forum spoke about opportunities for funding diesel programs under the Congestion Mitigation and Air Quality (CMAQ) and the Diesel Emissions Reduction Act (DERA). Dawn outlined the pros and cons of each method of funding. For CMAQ, some of the benefits include: large amount of funding available (\$1.6 billion / annually), allows opportunities for replacement, re-power and the use of retrofits while some negatives include: that few diesel projects have been done in the past, it can be a confusing process for project consideration and the funding is limited to non-attainment and maintenance areas. The benefits of the DERA are: it is a dedicated retrofit program, established by industry and environmental groups, high degree of support for the program the cons are that is a nice program but no money has been guaranteed and the state and local air quality grant budget has been reduced which hinders the implementation of DERA. Ross Patronskey of the Chicago Area Transportation Study expounded on the CMAQ program. He highlighted specific areas where CMAQ could assist diesel emissions reductions activities. Greg Morris of the Southeast Environmental Task Force (SETF), a non-profit organization in Southeast Chicago, explained how to leverage private funding sources to achieve

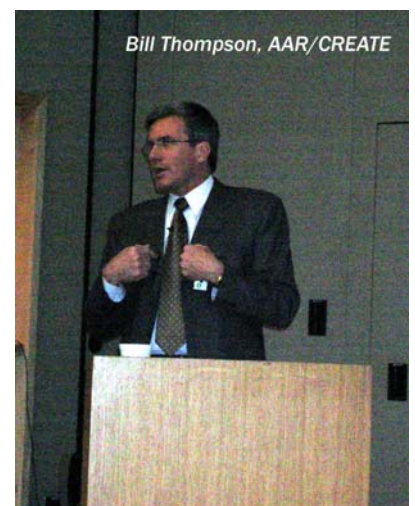
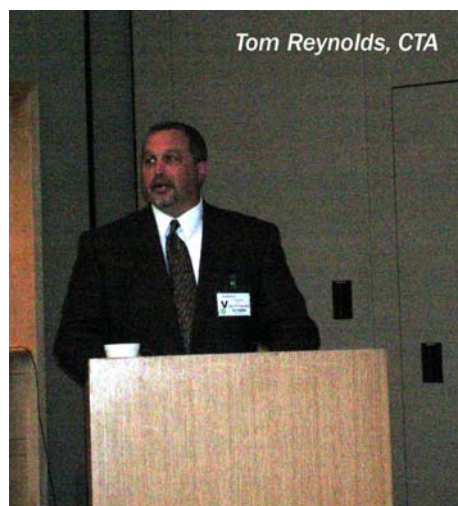
emissions reductions in areas of greatest need. Mr. Morris described SETF's approach to working with industry participants to improve a company's environmental performance and increase the air quality of the surrounding area. Natalie Ratajczak from the Chicago Climate Exchange (CCX) spoke about the evolution of CCX and the impact that emissions trading has toward reducing carbon-based emissions across the country and the globe.

Conclusion

The conference served as a great networking experience for companies to meet with both public policy officials and private industry to discuss opportunities to reduce diesel emissions in the Midwest. The real-world applications of diesel emission reduction projects implemented in Illinois demonstrated that cleaner air quality in Illinois can be achieved, and that a continued effort among the public and private sector will yield greater successes.

Photos:

The following photos were taken at the event. Where possible, names and affiliations have been noted.



Walt Zyzniewski, IDOT



Ed Arts, EcoTrans Technologies



Julie Magee, US EPA Region 5



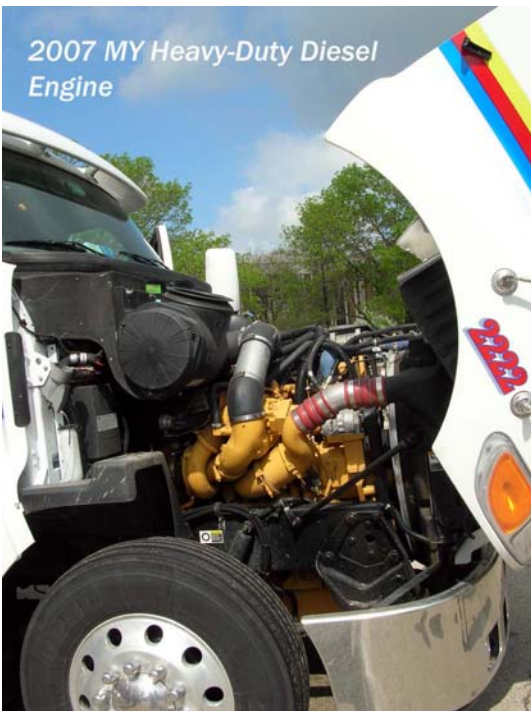
**Exhibition Room, Tools For Cleaning Up
Illinois Diesel**



Cynthia Meyer and Julie Henning, US EPA Region 5, with Bethany Kraseman,
Chicago Area Clean Cities



2007 MY Heavy-Duty Diesel
Engine



Exelon/Com Ed 2006 International Hybrid/Electric Bucket Truck



*Kyle Notestine, Dawn Fenton, Tom Pelletier, and Tom Malamos
Standing in front of a retrofitted Naperville School District school bus*



Ken Katch, Caterpillar



Auxilliary Power Unit (APU)



Ken Katch and Cheryl Newton



*Skid Steer Loader w/Catalytic Muffler
(Diesel Oxidation Catalyst)*

